

CLAIMS

What is claimed is:

- 1 1. An article comprising:
 - 2 a wire-bonding mounting substrate including a first surface and a second surface;
 - 4 a first wire-bond pad disposed upon the first surface; and
 - 5 a first via in the wire-bonding mounting substrate, wherein the first via is in electrical contact with the first wire-bond pad, and wherein the first via is disposed directly below the first wire-bond pad.
- 1 2. The article of claim 1, wherein the wire-bonding mounting substrate includes a first edge, the article further including:
 - 3 a second wire-bond pad disposed upon the first surface;
 - 4 a second via in the wire-bonding mounting substrate, wherein the second via is in electrical contact with the second wire-bond pad, and wherein the second via is disposed directly below the second wire-bond pad; and
 - 8 wherein the first via and the second via are staggered with respect to the first edge of the wire-bonding mounting substrate.
- 1 3. The article of claim 1, wherein the via includes a liner that is electrically conductive.
- 1 4. The article of claim 1, further including:
 - 2 an interconnect filling the via.
- 1 5. The article of claim 1, wherein the via includes a liner, further including:
 - 3 an interconnect filling the via.

1 6. The article of claim 1, wherein the wire-bond pad includes a first
2 layer and a second layer, wherein at least one of the first layer and the second layer
3 is selected from a precious metal, a precious metal alloy, silver, gold, platinum,
4 nickel, palladium, platinum, cobalt, rhodium, iridium, and combinations thereof.

1 7. The article of claim 1, wherein the wire-bond pad includes a first
2 layer and a second layer, and wherein the second layer is one of identical material to
3 the first layer, or at least one of a more noble, or a softer metal than the first layer
4 1317.

1 8. A package comprising:
2 a wire-bonding mounting substrate including a first surface and a
3 second surface;
4 a first wire-bond pad disposed upon the first surface;
5 a first via in the wire-bonding mounting substrate, wherein the first
6 via is in electrical contact with the first wire-bond pad, and wherein the first
7 via is disposed directly below the first wire-bond pad;
8 a die disposed on the first surface; and
9 a first wire bond that couples the die to the first wire-bond pad.

1 9. The package of claim 8, further including:
2 a second wire-bond pad disposed upon the first surface;
3 a second via in the wire-bonding mounting substrate, wherein the
4 second via is in electrical contact with the second wire-bond pad, and
5 wherein the second via is disposed directly below the second wire-bond pad.

1 10. The package of claim 8 further including:
2 a second wire-bond pad disposed upon the first surface;

3 a second via in the wire-bonding mounting substrate, wherein the
4 second via is in electrical contact with the second wire-bond pad, and
5 wherein the second via is disposed directly below the second wire-bond pad;
6 a second bond wire that couples the die to the second wire-bond pad;
7 and

8 wherein the respective lengths of the first bond wire and the second
9 bond wire are adjusted so as to tune the package.

1 11. The package of claim 8, further including:
2 a first bump coupled to the first via.

1 12. The package of claim 8, further including:
2 a first bump coupled to the first via; and
3 a first trace that makes an electrical contact to the first bump.

1 13. The package of claim 8, further including:
2 a first bump coupled to the first via; and
3 a larger substrate coupled to the first bump.

1 14. The package of claim 8, wherein the first wire-bond pad is part of a
2 plurality of wire-bond pads, and wherein each wire-bond pad is directly above a
3 corresponding via from a plurality of vias.

1 15. The package of claim 8, wherein the first wire-bond pad is part of a
2 plurality of wire-bond pads, wherein each wire-bond pad is directly above a
3 corresponding via from a plurality of vias, and wherein each via is coupled to a
4 bump.

1 16. The package of claim 8, wherein the first wire-bond pad is part of a
2 plurality of wire-bond pads, wherein each wire-bond pad is directly above a

3 corresponding via from a plurality of vias, wherein each via is coupled to a bump,
4 and wherein each bump is directly below a corresponding via.

1 17. A process comprising:

2 forming a first via in a wire-bonding mounting substrate, wherein the
3 wire-bonding mounting substrate includes a first surface and a second
4 surface, and wherein forming proceeds from the second surface toward the
5 first surface; and

6 patterning a first wire-bond pad directly over the first via.

1 18. The process of claim 17, wherein forming ceases upon contact with
2 the first wire-bond pad.

1 19. The process of claim 17, further including:

2 forming a via liner in the first via.

1 20. The process of claim 17, further including:
2 filling the first via with an interconnect.

1 21. The process of claim 17, wherein forming the first via precedes
2 patterning the first wire-bond pad.

1 22. The process of claim 17, further including:
2 filling the first via with an interconnect;
3 coupling the first via to a first bump.

1 23. The process of claim 17, further including:
2 coupling the first wire-bond pad to a first bump.

- 1 24. A method comprising:
2 forming a first via in a wire-bonding mounting substrate, wherein the
3 wire-bonding mounting substrate includes a first surface and a second
4 surface, and wherein forming proceeds from the second surface toward the
5 first surface;
6 patterning a first wire-bond pad directly over the first via; and
7 coupling a die to the first wire-bond pad.
- 1 25. The method of claim 24, further including:
2 forming a second via in the wire-bonding mounting substrate;
3 patterning a second wire-bond pad directly over the second via; and
4 coupling the die to the second wire-bond pad.
- 1 26. The method of claim 24, further including:
2 filling the first via with an interconnect.
- 1 27. The method of claim 24, further including:
2 filling the first via with an interconnect; and
3 coupling the first via to a first bump.
- 1 28. A computing system comprising:
2 a wire-bonding mounting substrate including a first surface and a
3 second surface;
4 a first wire-bond pad disposed upon the first surface;
5 a first via in the wire-bonding mounting substrate, wherein the first
6 via is in electrical contact with the first wire-bond pad, and wherein the first
7 via is disposed directly below the first wire-bond pad;
8 a die disposed on the first surface;
9 at least one of an input device and an output device coupled to first
10 wire-bond pad.

1 29. The computing system of claim 28, wherein the computing system is
2 disposed in one of a computer, a wireless communicator, a hand-held device, an
3 automobile, a locomotive, an aircraft, a watercraft, and a spacecraft.

1 30. The computing system of claim 28, wherein the die is selected from a
2 data storage device, a digital signal processor, a micro controller, an application
3 specific integrated circuit, and a microprocessor.